Numerals and Quantifiers in Argumentative Writings *

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議論文は、自己の意見を聞き手に説得するための論理的な展開を行うレジスターで、社会で幅広く慣行され（例、社説、TOEFLのエッセイ）、その語彙や談話構造の類似が指摘されている (Biber, 1988; Swales and Freak, 1994; Connor, 1987)。Miki (2007) では議論文の数量詞、*many*が他のレジスターと比較した場合、有意な差を示すことを指摘している。しかし、数量詞の研究は、統語と意味の関係が中心で、その実際の使用や具体的な機能の解明はまだ行われていない (Larson and Segal, 1998; May, 1985)。一方、数詞（アラビア数字と数の英単語）については、アメリカの討論の重要性が指摘され (Milward, 1999)、高級紙と大衆紙の数詞の修辞上の違いや報道価値が言及されたが (Bell, 1991)、議論文における数詞・数量詞の本格的な研究はほとんどない。

そこで、本稿では、専門家による議論文（自作の英国高級紙の社説コーパス、約100万語）と専門家によらない議論文（英語を母語とする学生の社会問題に関するエッセイ、LOCNESS）に分けて、数詞と数量詞の実際の文脈における使用と機能、修辞効果を調べた。まず、様々な英語のレジスターで構成される参照コーパスで、社説およびLOCNESSを統計的に比較することによって、それぞれの議論文コーパスに特有の数詞及び数量詞を抽出した(特徴語分析)。そして、これらの数詞と数量詞の連鎖(クラスター)やコンコーダンスの考察によって、パターンを発見して、その機能を分析した。

その結果、社説はLOCNESSと異なって、例えば、四捨五入した大きな数詞で金額や人々の数を表わす、あるいは小数点をパーセントや温度の尺度と共に使用する、など数詞を巧みに使い分けていた。一方、数量詞に関しては、LOCNESSと社説では、共にmanyの頻度が参照コーパスよりも有意な差を持って高いだけでなく、頻度が最上位の連語も同じmany peopleだったが、LOCNESSと比べると社説は*many*及び*many people*の相対頻度が低かった。更にLOCENSSの*many people*は多数派の意見を述べたあとで、それを否定して自己の意見を主張する、というsemantic prosodyを表していた。社説でもこうしたsemantic prosodyが観察されるものの、むしろ*many*を焦点にしているパ

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* 議論文における数詞と数量詞（三木 望）

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ターンの方が顕著であった。これは semantic prosody が単語の性質よりも語の連鎖の談話の中に存在して、レジスターやジャンルが変われば semantic prosody も変わるという定義と一致する。社説と学生のエッセイのレジスターは同じ議論文だが、本稿では、両者で書き手の読者への意識や目的が異なる、つまりジャンルが異なることを指摘した。

1 Introduction

Argumentation requires writers/speakers to argue for or against a view on the basis of objective evidence so as to persuade readers/hearers. Van Emeren (1987) defines argumentation as follows:

> Argumentation is a speech act complex consisting of a constellation of statements designed to justify or refute an opinion and which is aimed at convincing a rational judge, who reacts reasonably, of the acceptability or unacceptability of that point of view (van Emeren, 1987: 202).

This definition suggests that argumentation is not only an illocutionary act but also a perlocutionary act. For the vigorous and logical development of one's own views and successful persuasion of their readers, good argumentative writings exhibit problem-solving features, unlike the general-specific passages which are often found in descriptive and expository writings (Swales and Freak, 1994: 57; Connor, 1987: 59). In a logical process of argumentation meant to persuade its readers/hearers, information first flows from the description of a situation, identification of a problem and description of a solution to its final evaluation. Hoey (1979: 33–61) indicated that there were specialised words to signal each structural unit of the discourse pattern (cf. Francis, 1994; Winter, 1977). Fowler (1991) argued that editorials displayed textual signposts such as 'firstly, ... secondly, ...', a feature which is often observed in argumentative writing such as academic writing and students' essays (cf. Bhatia, 1993; Bolívar, 1994; van Dijk, 1977; Swales and Freak, 1994). Despite such discourse and lexical similarities, Miki (2009a) found that different examples of argumentative writing, such as editorials and students' essays, showed different kinds of signal nouns. The present research will focus on another rhetorical feature in argumentative prose, which has not been investigated in previous studies, that is, numerals (i.e., Arabic numbers and numeral nouns) and quantifiers in argumentative prose such as *many*, and will clarify how they are lexicalised and exploited

in professional argumentation (i.e., editorials) and non-professional persuasion (i.e., student essays) in turn.[1] Specifically, I want to answer the following research questions:

1. How are numerals and quantifiers (i.e., *many*) used in argumentation to achieve effective persuasion?
2. What are the differences in the use of numerals and quantifiers (i.e., *many*) between the professional writing and non-professional writing of argumentation?

2 Previous Studies

Quantifiers are a topical issue in formal semantics and syntax but the actual use of them seems to have been left unnoticed (Larson and Segal, 1998; May, 1985). Biber (1988) revealed lexical features such as modal auxiliaries in persuasive prose, including editorials, expounded by Westin (2002), but did not mention the use of quantifiers at all. Only Milward (1999) in his discussion made several interesting points about it. The American debating style emphasises a series of facts and figures to support one's views, possibly due to its hard social topics, for instance, politics and economics, which require expertise, based on solid facts and figures. However, the importance of numbers in argumentation has been ignored in research, but Miki (2009b) noted that quantifiers as well as comparatives were statistically outstanding, compared with other registers, in American students' writing and in TOEFL model essays, suggesting probable patterns and functions.

In contrast, figures are well established in media studies as "a rhetorical device" and "a means to the end of good news stories" (Bell, 1991: 203). Bell (1991: 155–160) related numbers to the news value of facticity, which is the degree of the use of facts and figures in news stories such as locations, names, amounts of money, and numbers. Bell (1991: 202-203) also stated that figures are at the centre of facticity and that facticity is the centre of news writing. Figures ensure the facts and boost the news values. Figures give objective and empirical support to news stories so as to gain trust from the readers, but, at the same time, the editor control objectivity with figures in order to make one fact more newsworthy than another (compare the spelled-out state budget, '4,360,000,000,000' in a tabloid with

[1] Larson and Segal (1995: 225) defined quantification as describing '*how many* things of a certain sort' and called *every, no, some, two*, etc., quantifiers. In this paper I use 'quantifiers' to cover uses of *many, every, etc.*, and 'numerals' for figures and numeral nouns such as *two* for explanation.

'4,360 million' in a quality paper (Bell, 1991: 203)). Readers are not often in a position to judge whether statistics is significant or not. What matters is not the exact size; the mass media change the impression of the original numbers by measurement (van Dijk, 1998a, b, quoted by Bell, 1991: 203–204; also see Best, 1994).

I would like to show how editorialists differentiate round numbers from exact numbers for effective argumentation and how non-professional writers, such as students in their essays, manipulate them. Thus, I will investigate the actual use of numerals in argumentative prose and explore how they lexicalise numerals and quantifiers (i.e., *many*).

3 Methodology

For this research, three datasets were prepared: the American and British LOCNESS corpora (henceforth, Ameri-LOCNESS and Brit-LOCNESS, respectively), and the British editorial corpus (BEC).

Table 1: Argumentative data

Argumentative Corpora	Tokens	Types	No. of texts
BEC	1,001,188	33,811	2,016
Brit-LOCNESS	154,580	11,926	206
Ameri-LOCNESS	167,702	11,698	208

For this research, broadsheet editorials were chosen as an example of professional writing; as Bell et al. (1999: 20) indicated, the quality papers represent standardised English and are widely chosen by researchers (Bolívar, 1994; Caldas-Coulthard, 1994). I compiled BEC from four leading British broadsheets with about 2.5 million words each: *Times*, *Guardian*, *Independent* and *Daily Telegraph* in 2006. As a source of non-professional writing, LOCNESS was chosen; it consists of two corpora: one of argumentative essays written by American university students and the other of persuasive prose by British university students. The texts are about social, general topics; *crime does not pay*, for example.

With special focus on quantifiers and numbers, this research will identify these words specific to professional and non-professional writing by keyword analysis. Keyword analysis enables us to identify words of statistically higher or lower frequency in a target corpus than a reference corpus, which is a norm of measurement, usually a large corpus of a variety of English (Baker, 2004). The computer software, *WordSmith* Ver 5, put out

significantly outstanding keywords, based on the log-likelihood ratios (henceforth, the LL ratios). Words with the LL ratios at significance level are in the keyword list. Specifically, the keywords which are statistically more frequent than in the reference corpus are called positive keywords, while those which are statistically less frequent keywords than in the norm are negative keywords. I extracted only quantifiers and numerals from both types of list and investigated their actual use by means of collocation (i.e., frequent word combination), concordance line analysis, and contextualization.

This study selected FLOB (the Freiburg-Lancaster-Oslo-Bergen Corpus; 1,226,285 words) for British English and FROWN (the Freiburg-Brown Corpus; 1,229,39 words) for American English as norms, considering the regional differences of the targets. FLOB and FROWN consist of written English only, complied in early 1990, and are well-balanced in terms of their genre selections. The argumentative corpora will be referenced to FLOB/ FROWN on the same benchmark (e.g., BEC vs. FLOB). They will also be compared directly (e.g., BEC vs. Brit-LOCNESS), where necessary.

4 Results and discussion

4. 1 Numerals

In comparison with the reference corpus (i.e., FLOB), BEC displayed more Arabic numbers in the positive keyword lists than LOCNESS.

Table 2: Arabic numbers in the positive keyword lists (in order of the LL)

BEC	2004, 2001, 2003, 1997, 0, 2005, 2002, 2008, 1999, 2010, 2000, 1998, 2006, 2007, 2012, 2009, 1994, 1990s, 1996
Brit-LOCNESS	5th, 1968, 1958, 1992, 1962, 1972
Ameri-LOCNESS	20th, 1994

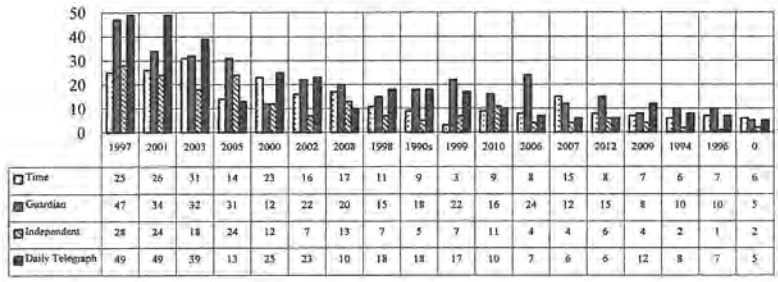


Figure 1: Figures from each British broadsheet (in order of Freq.)

Obviously, the four-digit numbers were key years, or topic-specific words. The most frequent figure, *1997* was a year, when Tony Blair took office, forming *since 1997* with the highest statistical index of strength of combination (t-score, 12.21, cf. 8.05 for *in 1997*). As this collocation suggests, the mass media had watched Blair from the departure, mentioning the change after 1997. The second and third ranked years were concerned with terrorism and a war. On 11 September, 2001 the US was suddenly attacked; in March 2003 the US started the Iraq war, which indicates how long these international conflicts had influenced the British newspapers.

Interestingly, *Guardian* and *Daily Telegraph* more frequently employed the figure in the keyword list than the rest (*Times*, 241; *Guardian*, 353; *Independent*, 179; *Daily Telegraph*, 322). In particular *Guardian* frequently referred to up-coming years, when significant political events would be held; 2008 and 2009 were possible election years then; 2007 was the last year of the Blair administration. This newspaper also most frequently cited the current year (i.e., 2006 then) and the previous year (2005), adding to clarification and explicitness.

(1) And if the resumption of the British nuclear power programme already looked likely in *2005*, despite the cost, it is now beginning to look a racing certainty in *2006*, thanks to the momentous action of Mr Putin (*Guardian*).

Guardian developed their arguments, referring to the recent years. Thus, the years in the keyword list characterise how much and which domestic and international events the British newspapers were interested in. This suggests that the events of the top three years had long casted a shadow over the British society.

Another keyword, *0* formed a part of the decimal units in particular before measurement phrases such as percentage or temperatures: *0.9 per cent* and *0.7 C increase in the daily temperature*, which gives vividness and reality to the argument. Unlike BEC, LOCNESS had *0* as a negative keyword, which indicates that neither student writers' corpus used small numbers such as decimals. LOCNESS showed only topic-specific numbers: *5th* in *the 5th Republic of France* from British students' essays about 'Parliamentary system.'

The negative keywords, the underuse of numbers in comparison with the reference corpus, totalled 127 items in BEC, followed by Ameri-LOCNESS (50) and Brit-LOCNESS

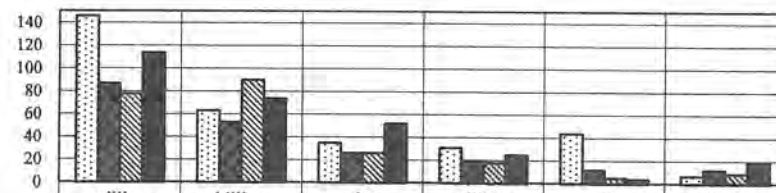
(31). As the newspaper convention goes, according to Bell (1991: 204), every single-digit number, 1 to 9, was spelled out and turned up as a negative keyword—a less frequent word in comparison with FLOB, though two- or three-digit numbers appeared in the negative keyword lists. Overall, the editorials did not employ specific numbers so much. The same applies to the students' persuasive writing. This suggests that student writers do not exploit small numbers as a rhetorical device. Non-professional writers seem not so highly aware of the importance of number for rhetorical use. This is probably due to the immaturity of the writing or to a lack of information (cf. Milward, 1999).

Numeral nouns showed different rhetorical uses in professional and non-professional writing, too.

Table 3: Numeral nouns in the positive keyword lists (in order of the LL ratios)

BEC	billion, million, billions, millions, nine, ten
Brit-LOCNESS	[None]
Ameri-LOCNESS	one, eighteen

Brit-LOCNESS had no numeral nouns in the keyword list, while Ameri-LOCNESS had *eighteen,* which was a number associated with changing the legal drinking age from 18 to 21 years in the US. *One* was such a multi-function word, being used as a pronominal and numeral noun (e.g., *one of the students*). In contrast, BEC showed categorical characteristics.



	million	billion	nine	millions	ten	billions
Time	146	63	35	31	44	7
Guardian	87	53	26	20	12	12
Independent	78	90	26	18	5	9
Daily Telegraph	114	74	52	25	4	19

Figure 2: Numeral nouns from each British broadsheet[2]

[2] *Guardian* and *Independent* used *bn*, the contracted form of *billion* as well as the full form. The frequencies were added to Figure 2.

BEC favoured large number units such as *million(s)*. More specifically, the most frequent collocation of *billion* and *million* on the left side was *pounds*, suggesting that they represented money. *Billions* formed clusters associated with money: *billions of pounds*, while the cluster of *millions* was *millions of people*. Both plural and singular forms of them were the round number rather than the precise number, which implies the possibilities of overestimation (Best, 1994: 374). The round numerals were more frequent in the editorials than FLOB but in particular *Times* and *Daily Telegraph* stressed the number of people and the amount of money with this kind of numeral. *Ten* was used as a time unit, as the trigrams show: *ten days ago* and *past ten years*. *Times* more frequently used *ten* than the other broadsheets, but also employed a figure, *10* which was more conspicuous in the rest.

Table 4: Frequencies of *10* and ten in each British broadsheet

Items	*Times*	*Guardian*	*Independent*	*Daily Telegraph*
ten	44	12	5	4
10	43	88	56	67
total	87	100	61	71

From the frequent right-sided collocates of *10*, it was mostly used as a unit of time or percentages, or before a set of figures (e.g., *10,000*) and numeral nouns (e.g., *10 billion*). Otherwise, this number refers to a famous address such as *10 Downing Street*. *Guardian* preferred a smaller unit, *10* to the larger ones, giving a little precise impression. By choosing the numeral noun than the figure, *Times* and *Guardian* added formality to the editorial texts.

Another keyword, *nine* was a number associated with the 9/11 attacks on the US, which was the most frequent in *Daily Telegraph*. Considering a high frequency of 2001 and 2003, this newspaper had the wider coverage of this terrorism as well as the Iraq war, which would be more memorable and appealing to some readers. In sum, there were categorical features of numerals in BEC but also diversities within the broadsheets in sharp contrast with LOCNESS, which had only topic-specific numerals.

4. 2 *Many* and the other related phrases

All the argumentative corpora revealed much higher LL ratios of *many* than a critical value, 15.13, which determines the significance level of 0.01%, according to the UCREL website.[3]

Interestingly, both of the LOCNESS collections had *many* as a positive keyword in comparison with FLOB/FROWN, and BEC, while BEC had it as a negative keyword, compared with LOCNESS rather than FLOB. This suggests that *many* was more frequently employed in argumentation than in FLOB but, within the argumentative datasets, it was more frequent in LOCNESS but not in the editorials. In spite of this disparity, *many* was most frequently used with *people* throughout the three datasets at a significant level (0.01%). *Many people* was favoured over any other combination, but it should also be noted that the relative frequency in BEC, 6.89 was much lower than those of LOCNESS (Brit-LOCNESS, 49.81; Ameri-LOCNESS, 44.13).

In order to see how a combination of *many* and *people* behaved in argumentation, I contextualised them. Frequent word combinations in a particular environment bear collocative meaning, 'semantic prosody', which "consists of the associations a word acquires on account of the meanings of words which tend to occur in its environment" (Leech, 1974: 17).

The frequent word combination, *many people* seems to be used for a kind of temporal generalisation, which the writer later claims to be different from his/her opinions. The first statement including *many people* functions to introduce a general situation in the problem-solution pattern in Hoey (1979), which is denied by the writer's argumentative opinions. Interestingly, similar patterns were found in (2) from Ameri-LOCNESS.

(2) ***Many people feel*** that the Bible is just a conglomeration of fairytales to explain a few things humans may question. ***I disagree with this viewpoint. I feel that the Bible is very real and true.*** Whether or not a reader agrees with the trueness of the Bible, it is clear that it has been established over time and is accepted all over the world (American-LOCNESS).

[3] For UCREL, see http://lingo.lancs.ac.uk/llwizard.html.

After the general opinion among *many people*, the author strongly disclaimed it. There are similar examples of *many people* in BEC:

(3) ... ***Many people will say*** it is pointless to blame the NHS (The British National Health Service) for such attitudes, as it merely mirrors the thinking of society as a whole, which over generations has developed into a form of subtly expressed but deep-rooted contempt for elderly people. ... These shifts in the tectonic plates of society are not the fault of the NHS. ***Nevertheless, we surely have a right to expect the health service to take a leading role in holding out against these forms of discrimination and in pointing the way towards new standards, not merely of "care" but in terms of attitude*** (*Independent*).[4]

It is important that *will say* in *Many people will say* ... expresses an opinion rather than a piece of reporting, which the editor criticised, making suggestions. Seemingly, a writer uses *many people* to give an opposing view deliberately and argue with readers about it, activating the debate. The point here is that a writer does not aim to negate the proposition beginning with *many people* but to evaluate their opinion, in contrast to general views.

The semantic prosody of *many people* seems clearer, in particular where it is followed by opinion verbs (e.g., *feel, believe*, and *argue*) to indicate not specific or personal but general views. Collocations are not merely frequent word combinations or a frequent sequence of words but likely to impart unique flavours to meanings (see Leech, 1974: 17; Hoey, 1991: 6–7). This is authentic semantic prosody, that is, "the spreading of connotational colouring beyond single word boundaries" (Partington, 1998: 68). The collocations themselves allow for some lexical or syntactic variations (Sinclair, 1991: 111–112), but it is emphasized that semantic prosody is a consistent discourse function of a sequence rather than the property of a word (Hunston, 2007: 258). The collocation of *many people* provides support for this view; the generality of *many people* in the subject position with opinion verbs does not always exist in the words.

Interestingly, *many people* and *most people* formed a similar chain of discourse: both statements were followed by their negation. This pattern was found in editorials.

[4] ( ) by the author.

(4) ... British politics has never generated a more effective soundbite than "Tough on crime; tough on the causes of crime". Everybody thinks they know what it means. ***Most people agree*** with what they think it says. ***Yet no slogan has been more persistently abused and scorned by both its original Labour coiners and its late-coming Conservative imitators*** (*Guardian*).

People without *many* in the subject position followed by an opinion verb can function in largely the same way as *many people*, as seen in (5), where *people* first expressed general views about the monarchy. It was negated later by the writer.

(5) ... So ***people say*** that we should not have a monarchy where they all cheat on one-another and ***lots of people certainly think*** that Prince Charles has no right to become king. ***Many people argue*** that we cannot afford a Monarchy, even though the Queen does now pay tax. This was highlighted by the fire at Windsor Castle, for which the tax payer had to foot the bill. ***I personally feel that we should retain the Monarchy***. They are our countries heritage and other countries envy us for our Monarchy. They give our country something to feel proud of, who has never dreamed of being a Royal? (Brit-LOCNESS)

People itself bears a generic meaning, thus 'people in general'. When this word occurs in a similar environment to that of *many people*, it comes to bear about the same semantic prosody. It should be noted that rather than *many* itself, a pattern of *many people* with an opinion verb gives rise to the semantic prosody. This happens to *most people*. Without a definite article, *most* is not a comparative, or a superlative but literally means "nearly all". However, when *most people* is set in a similar discourse to *many people*, it imparts about the same or quite similar semantic prosody. Similarly, *people* without quantifiers such as *many* and *most* can serve to introduce a general view in particular in a similar chain of discourse but these modifiers such as *many* and *most* call for attention from readers, which is favoured in argumentative writing. Writers probably take advantage of this combination so as to make their opinions stand out or seem distinct from general views, leading to their own evaluations of the statement. Thus, the writers of argumentative prose tactfully control their commitment in argumentation with such quantified phrases.

As indicated at the beginning of this section, BEC had *many* as a positive keyword

against FLOB (the LL ratio of 181.29) but a negative keyword against both the LOCNESS datasets (–115.54 against Brit-LOCNESS; –227.6 against Ameri-LOCNESS). To put it another way, the editorials employed *many* more frequently than so-called 'English in general' but less frequently than students' argumentative essays. I would maintain that this results from the genre difference, between professional writing such as editorials and non-professional writing. Importantly, *many people* in BEC was also followed by opinion verbs, resulting in a unique semantic prosody but comprising different dominant patterns (see Table 5):

Table 5: Three-word clusters of *many people* from BEC

No.	Clusters	Freq.	Length
1	many people are	18	3
2	how many people	14	3
3	so many people	12	3
4	many people who	6	3
5	not many people	5	3

The frequent sequences of *many people* showed that editorials focus on *many* rather than *people* when *many* in *many people* was qualified by *how* and *so*.

(6) And for a nation as diverse as Britain, it is impossible to say with any degree of certainty ***how many people*** are here unofficially (*Independent*).

(7) He also asks why ***so many people*** are still being body-searched at airports, including those whom proper profiling would rule out as being terrorist suspects (*Daily Telegraph*).

How many people and *so many people* do not have semantic prosody; the editor just questioned the number of people or stressed the large number. The student writers in LOCNESS used *many people* for temporal generalization, while the journalist focused simply on the number. Just as the normality of collocation is closely related to genre, register, and style (Partington, 1998: 16–17), so semantic prosody varies in different environments. Hunston (2007: 263) stated, "particular registers select one lexical phenomenon more frequently than another", referring to the semantic prosody of *cause*.

Another cluster, *not many people* was not so frequent (Freq. 5) but carries the same

semantic prosody as that of *many people* with opinion verbs. The concordance analysis shows that *not many people* were followed by *are likely to* (3), *will* (1), and *would* (1), which involves the writer's negative evaluation. The difference lies in the explicit negation of *many people* using *not*, so it is a variant of *many people* with opinion verbs.

The editorials had a similar use of *many people*, as LOCNESS did. In fact, we observed examples with the semantic prosody of *many people* followed by opinion verbs in argumentation. However, the editorials also have another pattern with *many people*, which focuses on quantifying *many* rather than the generality of *people*. Since BEC had *many* as a negative keyword against LOCNESS, but more numeral expressions as positive keywords from FLOB, it would follow that the editorials avoid vague, fuzzy phrases such as *many people*, in pursuing journalistic prudence. Instead, *many people* in the editorials were used to manifest the writers' uncertainty: *many people* in the interrogative to express writers' uncertainty of number; *so many people* as merely an intensifier without referring to concrete evidence, as round numbers are.

Intriguingly, similar tendencies were found in *certain*, which was a negative keyword of BEC, thus, a marked underuse but a positive keyword of both of the LOCNESS datasets. The concordance lines of *certain* in LOCNESS show that it turns out not to express certainty, but rather to function as a hedging device (e.g., *to a certain extent*):

corner of the world. I do not speak of a	**certain**	object in particular, but of technology as
maintain gender identities, but only to a	**certain**	extent. The stereotyped male image woul
world to comprehensive view. And, to a	**certain**	extent, it has influenced now the world fu
such as the gathering of opposition to a	**certain**	law— it can be made immediately, while
s is where a person who does not like a	**certain**	minority avoids being around that minorit
bolic racism. In this, a person equates a	**certain**	group to a certain social problem. For exa
t her virginity, the flower reserved for a	**certain**	prince, was "ravished" from her by a sold
because it appeals to adult viewers. If a	**certain**	plot involves a murder, then the murder
ndependent, they decided to take on a	**certain**	way of life. This "way of life" was one th

Figure 3: CERTAIN in the concordance lines

In contrast to BEC the LOCNESS writers deliberately made them fuzzy rather than stating specific numbers, controlling their commitment; BEC places importance on numerical facts (i.e., facticity). Unlike tabloid papers, which use numbers for rhetorical purpose of exaggeration (Bell, 1991: 202–204), it is significant for the quality papers to create the news value of facticity by using detailed, exact numbers in their news reporting, keeping high standards of accuracy and thus gaining trust and popularity among their readers, relatively high-income, intelligent groups which attract advertisers. However, this is not always the case in newspaper editorials. News editorials hold facticity to some extent, so

as to keep rhetorical power, as observed in the less frequent use of *certain* and the use of decimal numbers, but possibly not so much as in reporting articles, as seen in the more frequent use of round numbers in BEC. Further evidence comes from collocations of *many people* which are specific to the editorials. The difference between BEC and LOCNESS is possibly due to the different genres of these corpora, though the register is the same; editorials form a genre, whose writers and readers share communicative purposes (Swales, 1990: 58). No doubt editors are highly aware of their subscribers, but this is not always the case with student writers.

5 Conclusions

This research has answered the research questions about the use of numerals and quantifiers in argumentation and the differences in using them between argumentative professional writing (BEC) and non-professional writing (LOCNESS). LOCNESS prefers quantifiers such as *many* to numerals, which were limited to topic-specific expressions. Rather they made most of this quantifier for their rhetorical purpose. In contrast, BEC differentiated itself from the other argumentative corpora; it favoured big round numbers (e.g., *million*) and tiny numbers (i.e., decimals) over one- or two-digit numbers (e.g., *two*, *twenty*). BEC did not have *many* as a positive or negative keyword against FLOB but had it as a negative one against LOCNESS. In fact, *many people*, which was the most frequent collocation in LOCNESS, behaved differently in BEC. The numerals appear to lend objective support to arguments but in fact the writers use them to control their commitment tactfully. In particular, the numerals in the editorials were highly selective; the editorialists tend to use round figures in reference to money and people, which gives a somewhat exaggerated impression to readers, but they exploited the tiny numbers such as decimals with percentage, which gives objective evidence to the argumentation.

The following limitations characterise this research. Some essays from LOCNESS were timed essays, where students were not allowed to use any references. This means that they were deprived of any chance to obtain exact information, including statistics about the topics, resulting in fewer numeral expressions in the essays. However, this study indicated the facts about the differences in the use of numerals between different kinds of argumentative prose, which cannot be explained only by the lack of resources in some of the writing. Further qualitative analysis is expected to investigate where in argumentative discourse each newspaper takes advantage of exact numbers for rhetorical purposes.

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